

In the Claims

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2 1. (Original) An imager comprising:

3 a) a photosensitive surface;

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5 b) a light source which produces at least one scanning light beam;

6 c) a deflector, arranged to deflect the at least one scanning light
7 beam onto the photosensitive surface;

8 d) a sensor which measures the orientation of the deflector;

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10 e) a controller operative to determine a placement error of said at
11 least one scanning beam on the photosensitive surface, responsive to the
12 orientation measurement by the sensor; and

13 f) an actuator, responsive to the displacement error, and arranged to
14 change the direction of deflection of the at least one light beam by the deflector,

15 wherein the sensor is configured to measure the orientation of the
16 deflector substantially at a null in a vibrational mode of the deflector.

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19 2. (Original) An imager according to claim 1 wherein the photosensitive
20 surface is a moving surface.

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23 3. (Original) An imager according to claim 2 wherein the controller
24 determines said placement error relative to a desired position of said
25 photosensitive surface.

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2 4. (Currently amended) An imager according to claim 2 ~~or claim 3~~,
3 wherein the moving photosensitive surface comprises the surface of a rotating
4 cylinder.

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7 5. (Cancelled)

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9 6. (Currently amended) An imager according to claim 1 ~~any of claims~~
10 ~~1-5~~, wherein the sensor is an optical sensor.

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13 7. (Original) An imager according to claim 6, wherein the sensor
14 comprises:

- 15 a) a second light source which produces a second light beam;
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17 b) a second deflector, fixed to the deflector or a support of the deflector,
18 which deflects the second light beam; and
19 c) an optical position sensor which measures a position of the deflected
20 second light beam.
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1 8. (Original) An imager according to claim 7, wherein the second light
2 source comprises a laser, and the second light beam strikes a surface of the optical
3 position sensor at an oblique angle, thereby avoiding reflection of the second light
4 beam from the optical position sensor back into the laser.

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6 9. (Currently amended) An imager according to claim 1 ~~any of claims~~
7 ~~1-8~~, wherein the vibrational mode is the lowest frequency vibrational mode of the
8 deflector.

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11 10. (Currently amended) An imager according to claim 9 ~~any of claims~~
12 ~~1-9~~, wherein the vibrational mode is a torsional mode.

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15 11. (Currently amended) An imager according to claim 1 ~~any of claims~~
16 ~~1-10~~, wherein the null is substantially at the center of the deflector in the scan
17 direction.

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19 12. (Currently amended) An imager according to claim 1 ~~any of claims~~
20 ~~1-11~~ wherein the deflection of the at least one scanning light beam is controlled in
21 a closed loop control system, utilizing said sensor measurement as feedback
22 signal.

1 13. (Currently amended) An imager according to claim 12 ~~any of claims~~
2 ~~1-12~~, wherein the feedback would be positive at the frequency of the vibrational
3 mode if the sensor were to measure the deflector at a maximum of the vibrational
4 mode.

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6 14. (Currently amended) An imager according to claim 1 ~~any of claims~~
7 ~~1-13~~, wherein the actuator is attached to at least one end of the deflector in the
8 scan direction, and rotates the deflector around an axis substantially parallel to the
9 scan direction, and where the sensor measures the orientation of the deflector.
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12 15. (Currently amended) An imager according to claim 1 ~~any of claims~~
13 ~~1-14~~ wherein the deflector is a mirror.
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16 16. (Currently amended) An imager according to claim 1 ~~any of claims~~
17 ~~1-14~~ wherein the deflector is a prism.
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19 17. (Currently amended) An imager according claim 1 ~~any of claims 1-16~~
20 wherein the imager is a printer or copier.
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23 18. (Cancelled)
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1 19. (Original) A method of producing an image on a photosensitive surface
2 in an imager, wherein a cross-scan position of a scan line with respect to the
3 photosensitive surface may vary from an expected position, the method
4 comprising:

5 a) deflecting a scanning light beam, utilizing a deflector, such that
6 the deflected scanning light beam falls on the photosensitive surface, thereby
7 producing a plurality of lines of the image;

8 c) changing the orientation of the deflector, to correct an error in the
9 cross-scan position of the lines on the photosensitive surface, caused by said
10 variation;

11 d) measuring the orientation of the deflector; and

12 e) controlling the change in the orientation of the deflector in
13 response to the measurement of orientation of the deflector,
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15 wherein the measurement of the orientation of the deflector is made
16 at a location on the deflector in the vicinity of a null of a vibrational mode of the
17 deflector.
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20 20. (Original) A method according to claim 19 wherein the photosensitive
21 surface is a moving surface.
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1 21. (Original) A method according to claim 20, also including:

2 a) measuring the position of the photosensitive surface; and

3 b) finding a difference between the measured position or orientation and an
4 expected position or orientation;

5 wherein changing the orientation of the deflector comprises
6 changing the orientation by an amount and in a direction which depends on said
7 difference.
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10 22. (Cancelled)

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13 23. (Currently amended) A method according to claim 20 ~~or claim 21~~,
14 wherein the moving photosensitive surface comprises the surface of a moving belt.
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16 24. (Currently amended) A method according to claim 19 ~~any of claims~~
17 ~~19-23~~, wherein the measurement is optical.
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1 25. (Original) A method according to claim 24, wherein the measurement
2 comprises:

3 a) reflecting a second light beam from a second deflector fixed to the
4 deflector or to a support of the deflector; and

5 b) measuring a position of the reflected second light beam.
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8 26. (Currently amended) A method according to claim 19 ~~any of claims~~
9 ~~19-25~~, wherein the vibrational mode is the lowest frequency vibrational mode.
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12 27. (Currently amended) A method according to claim 26 ~~any of claims~~
13 ~~19-26~~, wherein the vibrational mode is a torsional mode.
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15 28. (Currently amended) A method according to claim 19 ~~any of claims~~
16 ~~19-27~~, wherein the null is substantially at the center of the deflector in the scan
17 direction.
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20 29. (Currently amended) A method according claim 19 ~~any of claims 19-~~
21 ~~28~~ wherein the deflection of the at least one scanning light beam is controlled in a
22 closed loop control system, utilizing said measurement of deflection as feedback
23 signal.
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1 30 -34 (Cancelled)

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